

AMENDMENTS TO THE CLAIMS

LISTING OF CLAIMS:

1. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme, wherein one or more amino acid residues in a region of 349-377 amino acid of water-soluble PQQGDH derived from *Acinetobacter calcoaceticus* is replaced with other amino acid residues and has an inhibition constant (K_{si}) of 200 mM or more.

2. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Met365 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid, and has a K_{si} value of 200 mM or more.

3. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Met365 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with tryptophan or phenylalanine.

4. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Thr366 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid, and has a K_{si} value 200 mM or more.

5. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Thr366 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with aspartic acid, lysine, isoleucine, or asparagines.

6. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Tyr367 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid, and has a K_{si} value of 200 mM or more.

7. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Tyr367 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with aspartic acid.

8. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Ile368 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid, and has a K_{si} value of 200 mM or more.

9. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Ile368 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with asparagine.

10. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Cys369 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid and has a K_{si} value of 200 mM or more.

11. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Cys369 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with arginine.

12. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Ala374 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid, and has a K_{si} value of 200 mM or more.

13. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Ala374 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with proline.

14. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein one of the amino acids in 349-377 region of the amino acid sequence defined in SEQ ID NO: 1 and Asp167 are replaced with other amino acids.

15. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein an amino acid residue selected from the group consisting of Met365, Thr366,

Tyr367, Ile368, Cys369, and Ala374 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid and wherein Asp167 is replaced with another amino acid.

16. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein an amino acid residue selected from the group consisting of Met365, Thr366, Tyr367, Ile368, Cys369, and Ala374 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with another amino acid and wherein Asp167 is replaced with glutamic acid.

17. (Original) A modified glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme wherein Thr366 of the amino acid sequence defined in SEQ ID NO: 1 is replaced with aspartic acid, lysine, isoleucine, or asparagine, and wherein Asp167 is replaced with glutamic acid.

18. (Currently Amended) A glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme comprising the following amino acid sequence:

Cys Gly Glu Xaa Thr Tyr Ile (SEQ ID NO: 3)

wherein Xaa is Met or Trp.

19. (Currently Amended) A glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme comprising the following amino acid sequence:

Gly Glu Met Xaa Tyr Ile Cys (SEQ ID NO: 4)

wherein Xaa is Asp, Lys, Ile or Asn.

20. (Currently Amended) A glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme comprising the following amino acid sequence:

Glu Met Thr Asp Ile Cys Trp (SEQ ID NO: 5).

21. (Currently Amended) A glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme comprising the following amino acid sequence:

Met Thr Tyr Asp Cys Trp Pro (SEQ ID NO: 6).

22. (Currently Amended) A glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme comprising the following amino acid sequence:

Thr Tyr Ile Arg Trp Pro Thr (SEQ ID NO: 7).

23. (Currently Amended) A glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme comprising the following amino acid sequence:

Pro Thr Val Pro Pro Ser Ser (SEQ ID NO: 8).

24. (Previously Amended) A gene encoding a modified glucose dehydrogenase as claimed in claim 1.

25. (Original) A vector comprising the gene as claimed in claim 24.

26. (Original) A transformant comprising the gene as claimed in claim 24.

27. (Original) A transformant as claimed in claim 26 wherein the gene as claimed in claim 24 is integrated in its chromosome.

28. (Original) A method for preparing a water-soluble PQQGDH, comprising culturing the transformant as claimed in claim 27 and preparing water-soluble fraction from the cells of the transformant.

29. (Previously Amended) A glucose assay kit comprising the modified glucose dehydrogenase as claimed in claim 1.

30. (Previously Amended) A glucose sensor comprising the modified glucose dehydrogenase as claimed in claim 1.